



Docket No.: 050212-0716

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of	:	Customer Number: 20277
Akihiko NAMBA, et al.	:	Confirmation Number: 3240
Application No.: 10/580,346	:	Group Art Unit: Not Yet Assigned
Filed: May 25, 2006	:	Examiner: Not yet assigned

For: DIAMOND N-TYPE SEMICONDUCTOR, METHOD OF MANUFACTURING THE SAME, SEMICONDUCTOR DEVICE, AND ELECTRON EMITTING DEVICE

INFORMATION DISCLOSURE STATEMENT

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

In accordance with the provisions of 37 C.F.R. 1.56, 1.97 and 1.98, the attention of the Patent and Trademark Office is hereby directed to the documents listed on the attached form PTO-1449. It is respectfully requested that the documents be expressly considered during the prosecution of this application, and that the documents be made of record therein and appear among the "References Cited" on any patent to issue therefrom.

This Information Disclosure Statement is being filed within three months of the U.S. filing date OR before the mailing date of a first Office Action on the merits. No certification or fee is required.

The relevance of corresponding references for **JP 62-70295 A (Japanese Patent Application No. 1704860)** and **JP 63-302516 A (Japanese Patent Application No. 2081494)**, as well as reference **JP 3374866 B2** and **"Characterization of Boron-Doped Diamond**

- 10/580,346

Epitaxial Films,” by H. SHIOMI ET AL., “Ohmic Electrode of Phosphorus Doped N-Type Diamond,” “Growth and characterization of phosphorous doped {111} homoepitaxial diamond thin films,” by S KOIZUMI ET AL., and “Synthesis of S-doped N-Type Diamond Semiconductor,” by M. G. NISHITANI ET AL., all listed on the attached Form PTO-1449, is discussed in the specification.

Submitted herewith is the International Preliminary Report on Patentability, mailed August 3, 2006, concerning International Application No. PCT/JP2004 /017077, filed on November 17, 2004, along with the Written Opinion of the International Searching Authority. The documents discussed in the International Preliminary Report on Patentability should already be of record in this application.

Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.


Respectfully submitted,

McDERMOTT WILL & EMERY LLP

Bernard P. Cold (Reg. No. 46,429)
for
Brian K. Seidleck
Registration No. 51,321

600 13th Street, N.W.
Washington, DC 20005-3096
Phone: 202.756.8000 BKS:ark
Facsimile: 202.756.8087
Date: March 16, 2007

**Please recognize our Customer No. 20277
as our correspondence address.**

INFORMATION DISCLOSURE CITATION IN AN APPLICATION <div style="text-align: center;">  (PTO-1449) </div>				ATTY. DOCKET NO. 050212-0716		SERIAL NO. 10/580,346	
				APPLICANT Akihiko NAMBA, et al.			
				FILING DATE May 25, 2006		GROUP Not Yet Assigned	
U.S. PATENT DOCUMENTS							
EXAMINER'S INITIALS	CITE NO.	Document Number Number-Kind Code ² (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document		Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	
		US					
		US					
		US					
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		US					
		US					
FOREIGN PATENT DOCUMENTS							
EXAMINER'S INITIALS	CITE NO.	Foreign Patent Document Country Codes - Number 4 - Kind Codes (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document		Pages, Columns, Lines Where Relevant Figures Appear	Translation Yes No
		JP 62-70295 A	03-31-1987	SUMITOMO ELECTRIC IND LTD			JAPAN (w/English Abstract)
		JP 63-302516 A	12-09-1988	SUMITOMO ELECTRIC IND LTD			JAPAN (w/English Abstract)
		JP 7-69794	03-13-1995	SUMITOMO ELECTRIC IND LTD		Corresponds to JP 3374866 B2	ABSTRACT ONLY
		JP 3374866 B2	11-29-2002			Corresponds to JP 7-69794	X
OTHER ART (Including Author, Title, Date, Pertinent Pages, Etc.)							
EXAMINER'S INITIALS	CITE NO.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.					
		H. SHIOMI ET AL., "Characterization of Boron-Doped Diamond Epitaxial Films," Japanese Journal of Applied Physics, Vol. 30, No. 7, July 1991, pp. 1363-1366					
		"Ohmic Electrode of Phosphorus Doped N-Type Diamond," NEW DIAMOND, vol. 17, No. 1 (2001), pg. 6-12					
		S KOIZUMI ET AL., "Growth and characterization of phosphorous doped {111} homoepitaxial diamond thin films," Appl. Phys. Lett., Vol. 71, No. 8, August 1997, American Institute of Physics, p. 1065-1067					
		M. G. NISHITANI ET AL., "Synthesis of S-doped N-Type Diamond Semiconductor," NEW DIAMOND, Vol. 15, No. 4 (1999), p. 20-22					
		International Preliminary Report on Patentability issued in corresponding International Application No. PCT/JP2004 /017077, mailed August 3, 2006, and the Written Opinion of the International Searching Authority					
EXAMINER				DATE CONSIDERED			

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

1 Applicant's unique citation designation number (optional). 2 Applicant is to place a check mark here if English language Translation is attached.